

Description

Quick and Easy campfire

BACKGROUND OF INVENTION

[0001] THE FIELD OF THIS INVENTION: relates to the field of *portable campfires*. More particularly to *portable campfires* that utilize propane or natural gas for fuel, and do not use any logs, fillers, or water to defuse the gas. This invention is to replace the ambiance, light, and heat of a traditional wood *campfire*.

[0002] []The present invention uses a specially designed burner to produce a flame ball that has the color, look and flame action that will create the appearance of a wood campfire. This device is to be used as a substitute quick and easy no mess portable replacement for a wood fire, for heat, for light, for ambiance, and for cooking. The outdoor camping experience, for most people, is not complete without a fire. The fire is an integrals part of space heating, lighting, and Food preparation. There are many compressed gas alternatives to a wood fire for cooking, the problem is, that the flames are designed for maximum heat and are

blue in color and smaller than a normal wood fire. There are a couple of alternatives for campfire replacement. For example U.S. patent 6,289,887 and 6,227,843 and 5,901,697 and 6,192,881, all use filler/buffer material and /or artificial logs and / or water to defuse the gas and shape the fireball. Since most users watch the fire and not the logs, the logs cause unnecessary problems by using this inventions burner it is possible to achieve a "wood campfire" look without the defusing material. The defusing systems cause problems in portability (because of loose material, heat retention and carbon buildup) and are relatively large because of the artificial logs, there is a built in limit in available BTU"s of heat because the artificial logs retain and concentrate the heat inside of the device and increases the cooling time needed before the device can be packed. The burners that are designed to be use in cooking are not effective in replacing the esthetics of a wood fire, and the burners that replace the wood fire aesthetics are not efficient for cooking. With the State and Federal regulations that control and curtail the use of normal wood fires because of fire safety, in drought conditions and/or fire pit ash and litter around waterways and lakes, there is getting to be a large need for Quick, safe,

pack able, no-trace, and ecologically sound fire replacement device. This invention is light (under 6 lbs), quickly cooling (Pack able in under 10 minutes), compact (Legs fold for storage), and has no loose parts.

SUMMARY OF INVENTION

- [0003] The primary object of the present invention is to provide a quick and easy to use campfire replacement device.
- [0004] []Another object of the present invention is to make a portable campfire that is simple to use.
- [0005] []Another object of the present invention is to make a portable campfire that is easy to manufacture.
- [0006] []Another object of the present invention is to make a portable campfire that cools quickly.
- [0007] []Another object of the present invention is to make a portable campfire that is small and light for easy transportation and set up.
- [0008] []Another object of the present invention is to make a portable campfire that produces heat.
- [0009] []Another object of the present invention is to make a portable campfire that produces light.
- [0010] []Another object of the present invention is to make a portable campfire that is usable in "Leave no trace" camping situations.

[0011] []Another object of the present invention is to make a portable campfire that is usable during fire restriction periods.

[0012] []Many desirable aspects are inherent in using pressurized gas as a fuel source, such as, no sparks, and no smoke.

[0013] []The present invention "quick and easy campfire, fueled by portable bottles of propane gas connected thru a variable high-pressure regulator that is used to adjust the fireball size. The regulator is attached thru a flexible hose to the burner assembly. The burner assembly consists of a galvanized pipe bent in to a 12-inch circle with an input aperture connected to the flexible hose and a plug in the terminating end. The burner assembly must be adequately sized to reduce the gas velocity. There are varied hole sizes and hole patterns that modify the fireball shape and fire dancing activity, and therefore controls the fire usage. Two fire patterns and uses are to be used interchangeably with the windscreen base. The last part of the device is a windscreen base, with folding, collapsible, legs, for (1) holding the burner (2) providing a protective windscreen for the flames (3) Provide a reflective heat shield for the resting surface located under the base. The first burner pattern has 13 – 1/8-inch holes in a set pattern that pro-

duces a yellow orange fireball with long dancing fire fingers to produce a fire similar to a normal wood campfire. The second burner has 29 1/16-inch holes in a set pattern that produces a brighter Yellow flame that is uniform and steady, it produces a cleaner more uniform heat and light with less flicker.

[0014] []With this invention the state of the art is improved by using a round tube as a manifold built to prevent any mixing of gas with air before ignition, and bent in a annular shape allowing the placement of orifices of different sizes and angles to construct and control making of the fireball.

[0015] []With this invention the state of the art is improved by using aluminum that reflects and dissipates the heat and is bent in a shape that decreases the susceptibility to the effects of the wind.

[0016] []With this invention the state of the art is improved by using a process that produces a compact, light, easy to manufacture portable campfire.

BRIEF DESCRIPTION OF DRAWINGS

[0017] The accompanying Drawings which are part of the specifications:

[0018] []Figure 1: is a top view of the present invention.

[0019] []Figure 2: is a Side view of the present invention with the folding legs in an extended position.

[0020] []Figure 3: is a Side view of the present invention with the folding legs in the retracted position for storage.

[0021] []Figure 4: is a top view of the first burner, that produces the realistic wood fire replacement fireball, showing the hole location and pattern.

[0022] []Figure 5: is a top view of the second burner, that produces the uniform non-flickering fireball for heat and cooking, showing the hole location and pattern.

DETAILED DESCRIPTION

[0023] The Quick and easy campfire of the present invention consists of a windscreen base, with folding, collapsible, legs, for (1) holding the burner, (2) providing a protective windscreen for the flames, and (3) Provide a reflective heat shield for the resting surface located under the base. The Scalloped wavy edges of the wind screen Produce multiple vortices in a wind that protect the individual flames and increase the wind protection. The windscreen is made of Aluminum to increase the heat dissipation, increase the corrosion resistance, reduce weight, and shorten the cooling time. The legs are permanently attached to the wind-screen base. The legs interlock and fold to reduce the in-

ventions size in transport and storage. The interchangeable burners set in the windscreen base, The burner assemblies consists of a galvanized pipe bent in to a 12-inch circle with an input aperture connected to the flexible input hose and a plug in the terminating end. The preferred burner pattern has 13 each – 1/8-inch holes in a set pattern that produces a yellow orange fireball with long dancing fire fingers to produce a fire similar to a normal wood campfire. The second burner has 29 1/16-inch holes in a set pattern that produces a brighter Yellow flame that is uniform and steady, it produces a cleaner more uniform heat and light with less flicker. The device is fueled by portable bottles of propane gas connected thru a variable, high-pressure regulator that is used to adjust the fireball size. The regulator is attached thru a flexible hose to the burner assembly. The interchangeable burners allow the device to be used to produce an aesthetically pleasing wood fire replacement flame or a steady heat source for cooking. The integral windscreen base with folding legs allow for maximum portability in folding into a compact 14 inch by 14 inch by 4 inch package for transportation and storage that weighs only 5 lbs. Because the functionality is in the aesthetics of

the fireball and is not dependant on artificial logs or fillers to shape the fire, this allows the device to radiate more BTU"s and reduces the internal heat of the device, which allows the device to cool quickly and to be packed within 10 minutes of usage.

[0024] []The parts of the present invention are: []Item 1) the flexible hose and a variable regulator. Consisting of a high-pressure propane regulator varying from 0 to 10 PSI. the regulator comes with a standard hand tight POL or new style green connector (high capacity Type I) on the gas bottle end and a female ¼inch NPT on the outlet end. The hose is a 6 foot synthetic high-pressure gas hose with a male ¼inch normal pipe thread on one end and a 3/8 inch swivel on the other end. This item is shown connected to the burner in figures 1, 2, and 3.

[0025] []Item 2) is the folding legs, consisting of 2 each 3/16 inch galvanized steel rods 36 inches long and bent to form the winged shape with the flat stops shown in figures 1, 2, and 3. They are adjusted to clip, with self provided spring tension into the 3/16 inch holes located in the bent ears on the bottom of the windscreen base (Item 4).

[0026] []Item 3) is the burner, It consists of a ¾inch thin wall gal-

vanized steel tube, bent into a 12 inch diameter circle. There is a brass plug (Item 6 Figure 4, and 5) cut oversize and pressure fit into the end of the tube then crimped. The input end has a brass plug (Item 5 Figure 4, and 5) that is pressure fit into the input end and crimped, this plug has a thru hole that is threaded to mate a connector to the 3/8 inch swivel fitting on the flexible hose. The usage will determine which hole pattern is needed. The burners are interchangeable. The hole patterns are shown in (Figure 4, and 5) and are drilled into the tube. Figure 4 shows the first burner that has 13 (item 7 figure 4) 1/8-inch holes drilled in the illustrated pattern this produces a yellow orange fireball with long dancing fire fingers to produce a fire similar to a normal wood campfire, seven holes are drilled straight up in the top of the tube, the alternating 6 holes are drilled on a 45 degree angle to the inside of the top of the tube. Figure 5 shows the second burner, which has 29 (item 8 figure 5) 1/16-inch holes in the demonstrated pattern this produces a brighter Yellow flame that is uniform and steady, it produces a cleaner more uniform heat and light with less flicker. There are 15 holes that are drilled straight up in the top of the tube, the alternating 14 holes are drilled on

a 45 degree angle to the inside of the top of the tube. The burner that is being used just sets in the windscreen base (Item 4) and the input end of the burner extends thru a hole in the side of the windscreen base.

[0027] []Item 4) is the windscreen base, it consists of a 16 inch diameter circle cut out of 1/16 inch aluminum plate that has the outer 2 inches forged up to form a windscreen. The preferred pattern has the appearance of a large bottle cap. The Scalloped, wavy, edges of the windscreen produce a multiplicity of vortices in a wind that protect the individual flames and increase the wind protection. The final appearance can be varied without changing the fit or function of the essential claims of this device. There are five holes in the Windscreen, four 3/16-inch holes in the bottom that have small 5/8 X 3/4 inch tabs half punched around them that are bend down, and receive the folding legs. The fifth hole is located in the sidewall even with the bottom; it is oblong in shape and sized to pass the burner pipe.

[0028] []With all the above-described parts assembled as shown in figure #1, the input regulator is connected to a propane tank with the hand tight connector. The gas on the tank is turned on and then the regulator is slowly turned up while

a lighting device is held to the first hole on the burner, when it lights the flame on the first hole should be adjusted to about 2 inches in height, at that time the lighting device should be sequentially moved to the remaining holes to light them all. If this is not done the fireball will ignite in a dramatic fashion. After the fire is started use the variable regulator to adjust the campfire to the desired level. After you are finished enjoying the smoke free, safe fire turn of the tank valve off and then close the regulator. Let the device cool approximately 10 minutes before handling. At that point the device can be unscrewed from the gas supply and the legs can be folded up and the device can stored with no other cleanup needed.